

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A radio resource management method comprising the control steps of:

detecting the occurrence of interference between service areas provided by plural radio base stations; and

controlling transmission power of a common control signal, which governs a scope of a service area that a radio base station forms, for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations.

2. (Original) The radio resource management method defined in Claim 1, further comprising the step of detecting the occurrence of interference based on radio link quality information notified from each of said radio base stations.

3. (Original) The radio resource management method defined in Claim 2, wherein said radio link quality information comprises at least a radio link reception level;

and wherein said control step comprises the step of controllably reducing the transmission power of a radio base station, of which a reception level exceeds a predetermined threshold value and a current transmission power is more than a lower limit value, of radio base stations using the same frequency as a frequency currently used by said radio base station.

4. (Currently Amended) A radio resource management apparatus comprising:

detector for detecting the occurrence of interference between service areas provided by plural radio base stations; and

controller for controlling transmission power of a common control signal, which governs a scope of a service area that a radio base station forms, for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations.

5. (Original) The radio resource management apparatus defined in Claim 4, wherein the occurrence of interference is detected based on radio link quality information notified from each of said radio base stations.

6. (Original) The radio resource management apparatus defined in Claim 5, wherein said radio link quality information comprises at least a radio link reception level; and wherein said controller comprises means for controllably reducing the transmission power of a radio base station, of which a reception level exceeds a predetermined threshold value and a current transmission power is more than a lower limit value, of radio base stations using the same frequency as a frequency currently used by said radio base station.

7. (Currently Amended) A radio base station in a radio communication system, said radio communication system including plural radio base stations each which provides a service area and a radio resource management apparatus for managing radio resources of said radio base stations, comprising:

means for measuring a radio link quality and then notifying a radio resource management apparatus of radio link quality information being a measurement result; and

means for responding transmission power control issued from said radio resource management apparatus and then controllably changing transmission power of a common control signal, which governs a scope of service area that a radio base station forms, to suppress interference between service areas detected based on said measurement result in said radio resource management apparatus.

8. (Original) The radio base station defined in Claim 7, wherein said notification means performs a notification operation at predetermined notification intervals.

9. (Original) The radio base station defined in Claim 8, wherein when said radio link quality exceeds a predetermined threshold value, said notification interval is set longer than said threshold value.

10. (Original) The radio base station defined in Claim 8, wherein when a distribution value of a radio link quality measured within a fixed period exceeds a predetermined threshold value, said notification interval is set longer than said threshold value.

11. (Currently Amended) A radio resource management method comprising the steps of:

detecting the occurrence of interference between service areas provided by plural radio base stations; and

[[and]] controlling [[its]] transmission power of a common control signal, which governs a scope of a service area that a radio base station forms, to suppress the interference autonomously by each of said plural radio base stations.

12. (Original) The radio resource management method defined in Claim 11, further comprising the steps of:

measuring information on a radio link quality in each of said radio base stations and then mutually notifying other radio base stations of measured information; and

controllably reducing the transmission power thereof when a radio base station providing a maximum interference to other stations is specified based on said radio link quality information notified.

13. (Original) The radio resource management method defined in Claim 12, wherein, when said maximum interference amount exceeds a predetermined value, said transmission power is reduced controllably.

14. (Currently Amended) A radio base station comprising:

detector for detecting the occurrence of interference between service areas provided by plural radio base stations; and

controller for controlling transmission power of a common control signal, which governs a scope of service area that a radio base station forms, to suppress interference autonomously in response to said occurrence of interference between plural service areas.

15. (Original) The radio base station defined in Claim 14, further comprising:

means for measuring information on a radio link quality and then mutually notifying other radio base stations of measured information; and

means for controllably reducing transmission power when a maximum interference is provided to other station based on the radio link quality information notified from other radio base station.

16. (Original) The radio base station defined in Claim 15, when said maximum interference amount exceeds a predetermined value, said transmission power is reduced controllably.

17. (Currently Amended) A radio resource management method comprising the steps of:

receiving information of radio link qualities from plural radio terminals; and

distributively controlling a load, being a radio terminal accommodated in a radio base station, based on said information of radio link qualities from plural radio terminals, said radio link quality information including radio interference information.

18. (Original) The radio resource management method defined in Claim 17, wherein said radio link quality information includes information on link utilization to a radio base station, which is in communication with each of said radio terminals.

19. (Original) The radio resource management method defined in Claim 18, wherein said control step comprising the step of performing load distributed control based on the sum of sets of said link utilization information to a radio base station in communication collected from respective radio terminals for each radio base station.

20. (Original) A radio resource management apparatus comprising:

receiver for receiving information of radio link qualities from plural radio terminals; and

controller for distributively controlling a load, being a radio terminal accommodated in a radio base station, based on said information of radio link qualities from plural radio terminals.

21. (Original) The radio resource management apparatus defined in Claim 20, wherein said radio link quality information includes information on link utilization to a radio base station, which is in communication with each of said radio terminals.

22. (Original) The radio resource management apparatus defined in Claim 21, wherein said controller comprises means for distributively controlling a load based on the sum of sets of said link utilization information to a radio base station in communication collected from respective radio terminals for each radio base station.

23. (Original) A radio resource management method comprising the steps of:

receiving information of radio link qualities from plural radio terminals; and

controlling transmission power of a radio base station based on said information of radio link qualities from plural radio terminals.

24. (Original) The radio resource management method defined in Claim 23, wherein said radio link quality information has a reception level from a neighboring radio base station measured by each of said radio terminals; and wherein said control step comprises the step of controlling transmission power of said radio base station based on the sum of reception levels from neighboring radio base stations of the same frequency as the frequency used by an interested radio base station.

25. (Original) The radio resource management method defined in Claim 24, wherein said control step comprises the step of controllably reducing a transmission power of a base station where the sum of said reception levels exceeds a predetermined threshold value and the current transmission power is more than a lower limit value.

26. (Original) A radio resource management apparatus comprising:

receiver for receiving information of radio link qualities from plural radio terminals; and

controller for controlling transmission power of a radio base station based on said information of radio link qualities from plural radio terminals.

27. (Original) The radio resource management apparatus defined in Claim 26, wherein said radio link quality information has a reception level from a neighboring radio base station measured by each of said radio terminals; and wherein said control means comprises the step of controlling transmission power of said radio base station

based on the sum of reception levels from neighboring radio base stations of the same frequency as the frequency used by an interested radio base station.

28. (Original) The radio resource management apparatus defined in Claim 27, wherein said controller comprises means of controllably reducing the transmission power of a base station where the sum of said reception levels exceeds a predetermined threshold value and the current transmission power is more than a lower limit value.

29. (Original) A radio resource management method comprising the steps of:

receiving information of radio link qualities from plural radio terminals; and

controllably changing a frequency used by a radio base station based on said information of radio link qualities from plural radio terminals.

30. (Original) The radio resource management method defined in Claim 29, wherein said radio link quality information has a reception level from a neighboring radio base station measured by each of radio terminals; and wherein said control step comprises the step of controlling the frequency of said radio base station based on an interference amount being an average value of reception levels from neighboring radio base stations of the same frequency as the frequency used by an interested radio base station.

31. (Original) A radio resource management apparatus comprising controller for controllably changing a frequency used by a radio base station based on information on radio link qualities notified from plural radio terminals.

32. (Original) The radio resource management apparatus defined in Claim 31, wherein said radio link quality information has a reception level from a neighboring radio base station measured by each of said radio terminals;

and wherein said control means controls the frequency of a radio base station based on an interference amount being an average value of reception levels from neighboring radio base stations of the same frequency as the frequency used by an interested radio base station.

33. (Currently Amended) A radio terminal comprising:

means for measuring a radio link quality and then notifying a radio resource management apparatus of radio link quality information being the measurement result, said radio link quality information including radio interference information; and

means for responding distributed control indication for a load being a radio terminal accommodated in a radio base station, based on said radio link quality information, said distributed control indication being created from said radio resource management apparatus, and switching a radio base station to be connected.

34. (Original) The radio terminal defined in Claim 33, wherein said notifying means performs a notifying operation at predetermined notification intervals.

35. (Original) The radio terminal defined in Claim 34, wherein when a radio link quality exceeds a predetermined threshold value, said notification interval is set longer than that in the case of less than said threshold value.

36. (Original) The radio terminal defined in Claim 34, wherein when a distribution value of a radio link quality measured within a fixed period exceeds a predetermined threshold value, said notification interval is set longer than that in the case of less than said threshold value.

37. (Currently Amended) A computer readable program, that operably controls a radio resource management apparatus in a radio communication system, comprising the control step of:

responding to occurrence of interference between service areas provided by plural radio base stations and then controlling the transmission power of a common control signal, which governs a scope of service area that a radio base station forms, radio base station to suppress the interference.

38. (Original) A computer readable program, that operably controls a radio resource management apparatus in a radio communication system, comprising a control step of distributively controlling a load, being a radio terminal accommodated by a radio base station, based on information on radio link qualities notified from plural radio terminals.

39. (Original) A computer readable program, that operably controls a radio resource management apparatus in a radio communication system, comprising a control step of controlling transmission power of a radio base station, based on information on radio link qualities notified from plural radio terminals.

40. (Original) A computer readable program, that operably controls a radio resource management apparatus in a radio communication system, comprising a

control step of controllably changing a frequency used by a radio base station, based on information on radio link qualities notified from plural radio terminals.

41. (Currently Amended) A computer readable program, that operably controls a radio base station in a radio communication system, said radio communication system including plural radio base stations each providing a service area and a radio resource management apparatus for managing radio resources of said radio base stations, comprising the steps of:

measuring a radio link quality and then notifying said radio resource management apparatus of radio link resource information being a measurement result; and

responding to transmission power control produced from said radio resource management apparatus and thus controlling a change of transmission power of a common control signal, which governs a scope of service area that a radio base station forms, to suppress interference between service areas detected based on the measurement result in said radio resource management apparatus.

42. (Currently Amended) A computer readable program, that computer controls the operation of a radio base station in a radio communication system, said radio communication system including plural radio base stations each providing a service area and a radio resource management apparatus for managing radio resources of said radio base stations, comprising the control step of responding to occurrence of interference between plural service areas and controlling transmission power, to suppress interference autonomously.

43. (Currently Amended) A computer readable program for executing the operation of a radio resource management apparatus in a radio communication system, by means of a computer, comprising the control step of distributively controlling a load, being a radio terminal accommodated in a radio base station, based on information on radio link qualities notified from plural radio terminals, said radio link quality information including radio interference information.

44. (Original) A computer readable program for executing a radio resource management apparatus in a radio communication system, by means of a computer, comprising the control step of controlling transmission power of a radio base station based on information on radio link qualities notified from plural radio terminals.

45. (Original) A computer readable program for executing a radio resource management apparatus in a radio communication system, by means of a computer, comprising the control step of controllably changing a frequency used by a radio base station based on information on radio link qualities notified from plural radio terminals.

46. (Currently Amended) A computer readable program for executing the operation of a radio terminal by means of a computer, comprising the steps of:

measuring a radio link quality and notifying a radio resource management apparatus of the radio link quality information being the measurement result; and

responding a distributed control indication of a load based on said radio link quality information, said radio link quality information including radio interference information, said dispersion control being created from said radio resource

management apparatus, said load being a radio terminal accommodated in a radio base station, and thus switching a radio base station to be connected.